FIGURE 1. RENILLA RENIFORMIS GFP PROTEIN CODING SEQUENCE

5' PCR primer (bold)

R. ren: 1	ATGGTGAGTAAACAAATATTGAAGAACACTGGATTGCAGGAGATCATGTCGTTTAAAGTGAATC	64
R. ren: 65	TGGAAGGTGTAGTAAACAATCATGTGTTCACAATGGAAGGTTGTGGAAAAGGAAATATTT	124
R. ren: 125	TATTCGGAAACCAACTGGTTCAGATTCGTGTCACAAAAGGGGTCCCGCTTCCATTTGCAT	184
R. ren: 185	TTGATATTCTCTCACCAGCTTTCCAATACGGCAACCGTACATTCACGAAATACCCGGAGG	244
R. ren: 245	ATATATCAGACTTTTTTATACAATCATTTCCAGCGGGATTTGTATACGAAAGAACGTTGC	304
R. ren: 305	GTTACGAAGATGGTGGACTGGTTGAAATCCGTTCAGATATAAATTTAATCGAGGAGATGT	364
R. ren: 365	TTGTCTACAGAGTGGAATATAAAGGTAGTAACTTCCCGAATGATGGTCCAGTGATGAAGA	424
R. ren: 425	AGACAATCACAGGATTACAACCTTCGTTCGAAGTTGTGTATATGAACGATGGCGTCTTGG	484
R. ren: 485	TTGGCCAAGTCATTCTTGTTTATAGATTAAACTCTGGCAAATTTTATTCGTGTCACATGA	544
R. ren: 545	GAACACTGATGAAATCAAAGGGTGTAGTGAAGGATTTTCCCGAATACCATTTCATTCAAC	604
R. ren: 605	ATCGTTTAGAGAAGACTGATGTGGAAGACGGAGGTTTTGTTGAGCAACACGAGACGGCCA	664
R. ren: 665	TTGCTCAACTGACATCGCTGGGGAAACCACTTGGATCCTTACACGAATGGGTTTAA	720

3' PCR primer (bold)

FIGURE 2. RENILLA RENIFORMIS AMINO ACID SEQUENCE

(5' primer)

R. reni: 1	MSKQILKNTGLQEIMSFKVNLEGVVNNHVFTMEGCGKGNILFGNQLVQIRVTKGAPLPFA	60
R. reni: 61	FDILSPAFQYGNRTFTKYPEDISDFFIQSFPAGFVYERTLRYEDGGLVEIRSDINLIEQM	120
R. reni: 121	FVYRVEYKGSNFPNDGPVMKKTITGLQPSFEVVYMNDGVLVGQVILVYRLNSGKFYSCHM	181

(3' primer)

R. reni: 182	RTLMKSKGVVKDFPEYHFIQHRLEKTYVEDGGFVEQHETAIAQLTSLGKLPGSLHEWV	238

Figure 3. Expression of *R. reniformis* GFP in transduced cells

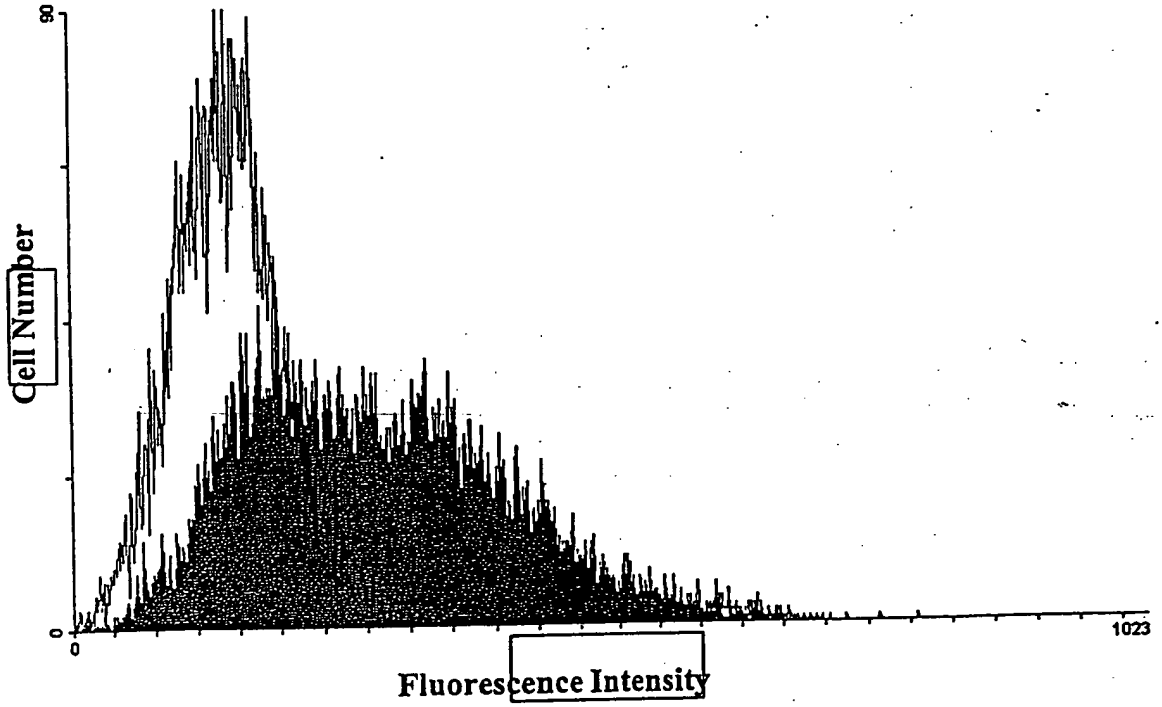

Figure 4. Fluorescence spectra

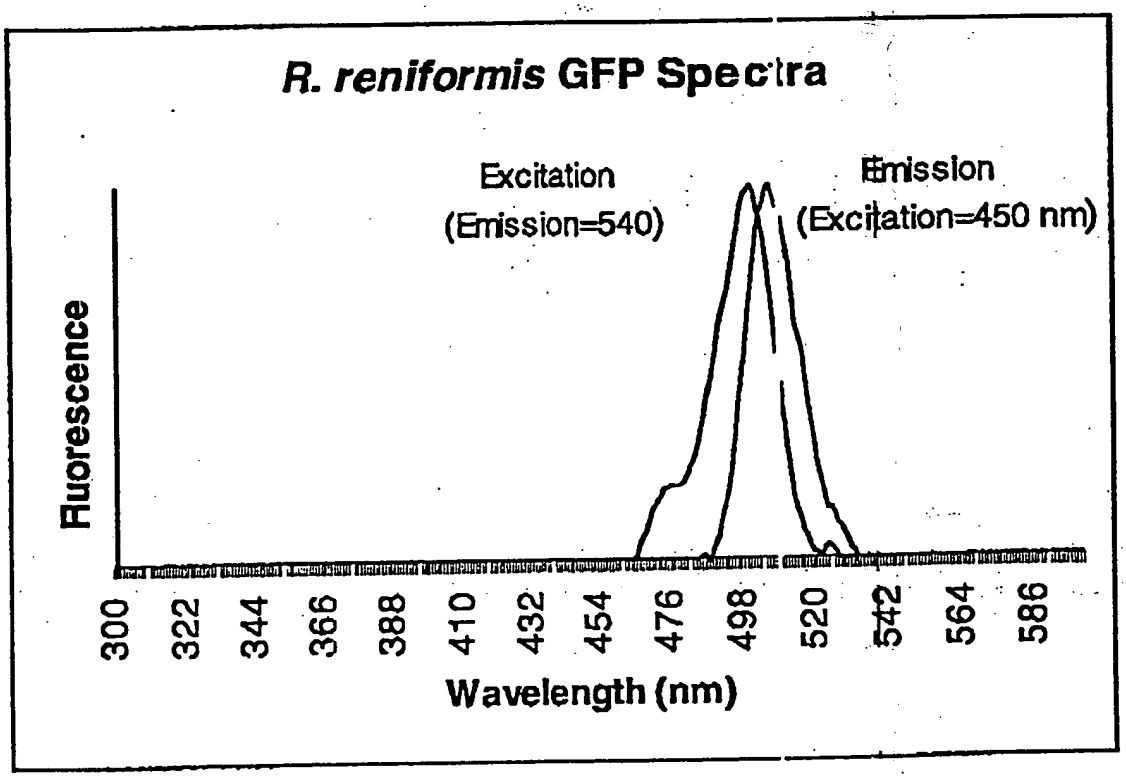

Figure 5. Sequence of a humanized *R. reniformis* GFP polynucleotide (SEQ ID NO: 3).

```
1   ATGGTGAGCAAGCAGATCCTGAAGAACACCGGCCTGCAGGAGATCATGAGCTTCAAGGTG
     M  V  S  K  Q  I  L  K  N  T  G  L  Q  E  I  M  S  F  K  V

61  AACCTGGAGGGCGTGGTGAACAACCACGTGTTCACCATGGAGGGCTGCGGCAAGGGCAAC
     N  L  E  G  V  V  N  N  H  V  F  T  M  E  G  C  G  K  G  N

121 ATCCTGTTCGGCAACCAGCTGGTGCAGATCCGCGTGACCAAGGGCGCCCCCCTGCCCTTC
     I  L  F  G  N  Q  L  V  Q  I  R  V  T  K  G  A  P  L  P  F

181 GCCTTCGACATCCTGAGCCCCGCCTTCCAGTACGGCAACCGCACCTTCACCAAGTACCCC
     A  F  D  I  L  S  P  A  F  Q  Y  G  N  R  T  F  T  K  Y  P

241 GAGGACATCAGCGACTTCTTCATCCAGAGCTTCCCCGCCGGCTTCGTGTACGAGCGCACC
     E  D  I  S  D  F  F  I  Q  S  F  P  A  G  F  V  Y  E  R  T

301 CTGCGCTACGAGGACGGCGGCCTGGTGGAGATCCGCAGCGACATCAACCTGATCGAGGAG
     L  R  Y  E  D  G  G  L  V  E  I  R  S  D  I  N  L  I  E  E

361 ATGTTCGTGTACCGCGTGGAGTACAAGGGCCGCAACTTCCCCAACGACGGCCCCGTGATG
     M  F  V  Y  R  V  E  Y  K  G  S  N  F  P  N  D  G  P  V  M

421 AAGAAGACCATCACCGGCCTGCAGCCCAGCTTCGAGGTGGTGTACATGAACGACGGCGTG
     K  K  T  I  T  G  L  Q  P  S  F  E  V  V  Y  M  N  D  G  V

481 CTGGTGGGCCAGGTGATCCTGGTGTACCGCCTGAACAGCGGCAAGTTCTACAGCTGCCAC
     L  V  G  Q  V  I  L  V  Y  R  L  N  S  G  K  F  Y  S  C  H

544 ATGCGCACCCTGATGAAGAGCAAGGGCGTGGTGAAGGACTTCCCCGAGTACCACTTCATC
     M  R  T  L  M  K  S  K  G  V  V  K  D  F  P  E  Y  H  F  I

604 CAGCACCGCCTGGAGAAGACCTACGTGGAGGACGGCGGCTTCGTGGAGCAGCACGAGACC
     Q  H  R  L  E  K  T  Y  V  E  D  G  G  F  V  E  Q  H  E  T

664 GCCATCGCCCAGCTGACCAGCCTGGGCAAGCCCCTGGGCAGCCTGCACGAGTGGGTGTAA
     A  I  A  Q  L  T  S  L  G  K  P  L  G  S  L  H  E  W  V  -
```

Figure 6. Sequence alignment between non-humanized (rGFP) and humanized hrGFP) *R. reniformis* GFP polynucleotides.

```
rGFP: 1     ATGGTGAGTAAACAAATATTGAAGAACACTGGATTGCAGGAGATCATGTCGTTTAAAGTG
            |||||||| || || ||  |||||||||| ||  ||||||||||||||    || || |||
hrGFP:1     ATGGTGAGCAAGCAGATCCTGAAGAACACCGGCCTGCAGGAGATCATGAGCTTCAAGGTG
             M  V  S  K  Q  I  L  K  N  T  G  L  Q  E  I  M  S  F  K  V

rGFP: 61    AATCTGGAAGGTGTAGTAAACAATCATGTGTTCACAATGGAAGGTTGTGGAAAAGGAAAT
            ||  |||||  ||  ||  ||  |||||  ||  ||||||||  |||||  ||  ||  ||  ||  ||  ||
hrGFP:61    AACCTGGAGGGCGTGGTGAACAACCACGTGTTCACCATGGAGGGCTGCGGCAAGGGCAAC
             N  L  E  G  V  V  N  N  H  V  F  T  M  E  G  C  G  K  G  N

rGFP: 121   ATTTTATTCGGAAACCAACTGGTTCAGATTCGTGTCACAAAAGGGGCTCCGCTTCCATTT
            ||  |  |||||  |||||  |||||  |||||  ||  ||  ||  ||  ||  ||  ||  ||  ||  ||
hrGFP:121   ATCCTGTTCGGCAACCAGCTGGTGCAGATCCGCGTGACCAAGGGCGCCCCCCTGCCCTTC
             I  L  F  G  N  Q  L  V  Q  I  R  V  T  K  G  A  P  L  P  F

rGFP: 181   GCATTTGATATTCTCTCACCAGCTTTCCAATACGGCAACCGTACATTCACGAAATACCCG
            ||  ||  ||  ||  ||     ||  ||  |||||  ||||||||||  ||  |||||  ||  |||||
hrGFP:181   GCCTTCGACATCCTGAGCCCCGCCTTCCAGTACGGCAACCGCACCTTCACCAAGTACCCC
             A  F  D  I  L  S  P  A  F  Q  Y  G  N  R  T  F  T  K  Y  P

rGFP: 241   GAGGATATATCAGACTTTTTTATACAATCATTTCCAGCGGGATTTGTATACGAAAGAACG
            |||||  ||     |||||  ||  ||  ||     ||  ||  ||  ||  ||  ||  |||||   |  ||
hrGFP:241   GAGGACATCAGCGACTTCTTCATCCAGAGCTTCCCCGCCGGCTTCGTGTACGAGCGCACC
             E  D  I  S  D  F  F  I  Q  S  F  P  A  G  F  V  Y  E  R  T

rGFP: 301   TTGCGTTACGAAGATGGTGGACTGGTTGAAATCCGTTCAGATATAAATTTAATCGAGGAG
             ||||  |||||  ||  ||  ||  |||||  ||  |||||     ||  ||  ||   |  ||||||||||
hrGFP:301   CTGCGCTACGAGGACGGCGGCCTGGTGGAGATCCGCAGCGACATCAACCTGATCGAGGAG
             L  R  Y  E  D  G  G  L  V  E  I  R  S  D  I  N  L  I  E  E

rGFP: 361   ATGTTTGTCTACAGAGTGGAATATAAAGGTAGTAACTTCCCGAATGATGGTCCAGTGATG
            |||||  ||  |||  |  |||||  ||  ||  ||   |  ||||||||  ||  ||  ||  ||  ||||||
hrGFP:361   ATGTTCGTGTACCGCGTGGAGTACAAGGGCCGCAACTTCCCCAACGACGGCCCCGTGATG
             M  F  V  Y  R  V  E  Y  K  G  S  N  F  P  N  D  G  P  V  M

rGFP: 421   AAGAAGACAATCACAGGATTACAACCTTCGTTCGAAGTTGTGTATATGAACGATGGCGTC
            ||||||||  |||||  ||   |  ||  ||     |||||  ||  |||||  ||||||||  |||||
hrGFP:421   AAGAAGACCATCACCGGCCTGCAGCCCAGCTTCGAGGTGGTGTACATGAACGACGGCGTG
             K  K  T  I  T  G  L  Q  P  S  F  E  V  V  Y  M  N  D  G  V

rGFP: 481   TTGGTTGGCCAAGTCATTCTTGTTTATAGATTAAACTCTGGCAAATTTTATTCGTGTCAC
             ||||  |||||  ||  ||  ||  ||  ||   |  |  |||   |||||  ||  ||     ||  |||
hrGFP:481   CTGGTGGGCCAGGTGATCCTGGTGTACCGCCTGAACAGCGGCAAGTTCTACAGCTGCCAC
             L  V  G  Q  V  I  L  V  Y  R  L  N  S  G  K  F  Y  S  C  H
```

Fig. 6 (cont)

```
rGFP: 541 ATGAGAACACTGATGAAATCAAAGGGTGTAGTGAAGGATTTTCCCGAATACCATTTCATT
          ||| | || ||||||||    ||||| || |||||||| || ||||| ||||| |||||
hrGFP:544 ATGCGCACCCTGATGAAGAGCAAGGGCGTGGTGAAGGACTTCCCCGAGTACCACTTCATC
           M  R  T  L  M  K  S  K  G  V  V  K  D  F  P  E  Y  H  F  I

rGFP: 601 CAACATCGTTTAGAGAAGACGTATGTGGAAGACGGAGGTTTTGTTGAGCAACACGAGACG
          || || ||  | |||||||| || ||||| ||||| || || || ||||| ||||||||
hrGFP:604 CAGCACCGCCTGGAGAAGACCTACGTGGAGGACGGCGGCTTCGTGGAGCAGCACGAGACC
           Q  H  R  L  E  K  T  Y  V  E  D  G  G  F  V  E  Q  H  E  T

rGFP: 661 GCCATTGCTCAACTGACATCGCTGGGGAAACCACTTGGATCCTTACACGAATGGGTTTAA
          ||||| || || |||||    ||||| || || || ||   | | ||||| ||||| |||
hrGFP:664 GCCATCGCCCAGCTGACCAGCCTGGGCAAGCCCCTGGGCAGCCTGCACGAGTGGGTGTAA
           A  I  A  Q  L  T  S  L  G  K  P  L  G  S  L  H  E  W  V  -
```

Figure 7. Relative fluorescence of CHO cells transduced by retroviral vectors harboring non-humanized or humanized *R. reniformis* GFP.

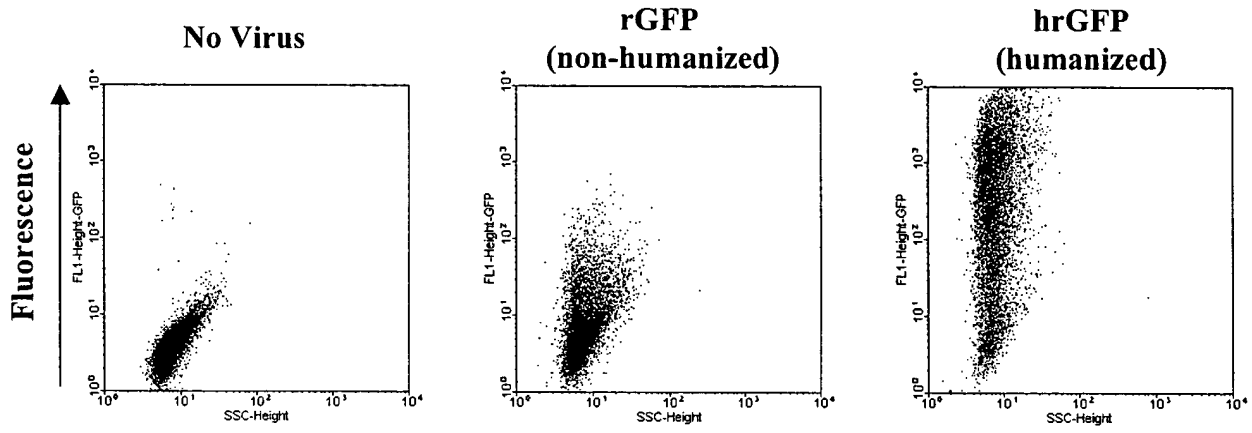

Figure 8. Relative fluorescence of 293 cells harboring single copy proviral integrants from which humanized or non-humanized *R. reniformis* GFP or EGFP are expressed